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13 The research goal is to develop a comprehensive intervention designed to increase early breast and cervical cancer detection among Filipino American women. This population has been shown to have high rates of late stage breast and cervical cancer. The first step toward increased early detection is identification and measurement of population characteristics related to screening practices and prospective interventions to improve screening rates.

A multidisciplinary, multicultural team designed and conducted a random telephone survey with a representative sample of 875 Filipino American women in 12 Northern California counties. A Census Tract based random digit dialing (RDD) method was used (using tracts with at least 8% Filipinos, based on 1990 Census). The sample included women aged 20-49, 50-64, and 65+. A questionnaire was developed in three Filipino languages and English. The instrument is based on formative research, a pilot test, and extensive pre-testing. Analyses showed that mammography and pap test rates varied by age, language use, insurance status and cultural factors (health beliefs, religious practice, modesty, and gender roles). In particular, those who were elderly, less acculturated, lacked insurance, and were highly traditional were less likely to be screened. The product of our findings will be a community-based intervention plan and application for a controlled trial to evaluate proposed interventions.

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FOREWORD

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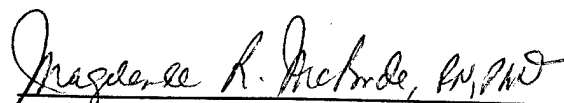
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FINAL REPORT

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November 25, 1998

INTRODUCTION

Nature of the Problem

This research has been directed at reducing high rates of late-stage breast cancer among Filipino American women (California Cancer Registry, 1991). This is a large and growing population for whom little is known about health practices, and there are virtually no data on knowledge, attitudes, intentions and practices pertaining to cancer screening. Interventions aimed at improvements in early cancer detection can only be effective if they account for and address existing barriers to screening, and if the interventions are delivered through modes and messages appropriate and acceptable to their intended audience. Such tailoring of education and other institutional activities require data on the needs and characteristics of specific population subgroups, including cultural and socio-economic influences on barriers, practices and resources.

Background of Previous Work

The Northern California Cancer Center (NCCC) has developed an extensive research program devoted to the study of cancer control among underserved and multi-ethnic populations. Three studies were related to the proposed research: 1) A National Cancer Institute (NCI) funded Program Project grant, *Pathways to Early Cancer Detection for Four Ethnic Groups*, (1992-1997) under the overall direction of Dr. Robert Hiatt. Dr. Pasick was Project Coordinator and Dr. Sabogal was Co-Investigator in this research. 2) The *Breast and Cervical Cancer Intervention Study (BACCIS*,1991-1997, Dr. Robert Hiatt, P.I.) was an NCI-funded study of community and clinic-based interventions intended to increase early detection among underserved women, particularly African American, Hispanic, White and Chinese American. Dr. Pasick was responsible for outreach interventions and process evaluation. 3) *Improving Health Surveys for Multi-Ethnic Populations* (1992-1996, Dr. Carol D'Onofrio, P.I.) was funded by the Centers for Disease Control National Center for Health Statistics. Dr. Pasick was Project Director in this study to develop guidelines for survey construction, translation, pilot-testing and administration and to compare survey methods (household and telephone) across four ethnic groups. Findings indicated that question construction for health surveys being conducted in English and other languages require highly simplified initial English versions. Also, exact translations from English may sacrifice important elements of meaning such that researchers must carefully and knowingly weigh potential loss of reliability from less exact translation with potential loss of validity from very precise translation.

Also from within our team, the following research has contributed to the state of knowledge on health in Filipino American culture. Dr. McBride was awarded three pilot study grants in 1991 from the William Henry Nelson Trust, School of Medicine, Stanford University. The first, *Health Status of Filipino World War II Veterans* used semi-structured interviews of 88

veterans. Among the findings were multiple health symptoms that were not brought to the attention of physicians while in the Philippines. *Health Symptoms and Acculturation in Filipino Elders* involves the development of an acculturation scale for Filipino American elders based on a modification of the Cuellar Acculturation Scale. *Generativity and Caregiving: Functions at Mid-Life of Women in Filipino Families* was a qualitative analysis of semi-structured interviews of members of three Filipino families. Findings suggested strong differences in caregiving roles and in decision making related to primary caregiving responsibilities. She was also a co-investigator for a pilot study at the Stanford Geriatric Education Center on the *Knowledge, Beliefs and Attitudes About Prostate Cancer among Filipino Immigrant Men*. Results indicate need for community education on preventive screening for prostate cancer.

Mr. Jang of Polaris Research, Inc. was the Principal Investigator of the *Filipino Smoking Prevalence Study*, through a grant to the Asian American Health Forum from the Tobacco Related Disease Research Program of the University of California in 1991. This was a statewide 30-minute telephone survey of 1318 Filipino men and women ages 18 and over (82% responding). Interviews were conducted in Tagalog, Ilocano and English by trained Filipina interviewers.

Purpose of Present Work

This study has the primary aim of developing a comprehensive program of interventions that will increase early breast and cervical cancer detection among Filipino American women. Based on the need for interventions designed to improve early breast cancer detection among Filipino American women, our understanding of the population, and our prior research experience, we developed the following objectives for this research:

     a. To collect information from a random, population-based sample of 875 Filipino American women on the correlates, barriers, and possible incentives to periodic use of breast cancer screening, including access to care, knowledge levels, attitudes, intentions, and practices regarding preventive health care in general, and cancer and cancer screening, in particular.

     b. To identify and define possible cultural barriers to early cancer detection across a range of socio-economic status, acculturation levels and periods of immigration.

     c. To assess the applicability of dominant behavioral theories to cancer screening among Filipino Americans.

     d. To use information from specific aims a, b, and c to develop a detailed plan, in the form of a research proposal, for implementation and evaluation of culturally appropriate interventions targeted to Filipino women and aimed at eliminating barriers to cancer screening and increasing early detection rates.

Both qualitative and quantitative methods have been used to gather information, develop and test hypotheses, and test dominant behavioral theories to produce answers to the following:

what predisposing, enabling and reinforcing factors influence the use of breast and cervical cancer screening among Filipino American women in Northern California?

The research began with formative research consisting of qualitative inquiry intended to elucidate a broad range of concepts, issues and problems that influence use and non-use of early detection methods in the target population. This produced hypotheses that addressed variations in population subgroups pertaining to cancer screening practices, behaviors and potential interventions. For example, the barriers to cancer screening may be different for less acculturated Filipino American women than for those who have adopted a more western lifestyle. These factors were operationalized into measurable variables in a survey instrument and translated from English to Tagalog, Ilocano, and Cebuano. Between the period of November 1996 until May 1997, a population-based random-digit-dialing telephone survey was conducted with 875 Filipino American women, ages 20 and over, residing in the 12 Northern California counties. The data from the survey were analyzed and interpreted to form an intervention plan intended to increase early cancer detection. The third year of the study was spent completing the development of the research instrument, conducting the telephone survey, conducting preliminary analyses on the data set, and developing a preliminary intervention plan. The requested no-cost extension to a fourth year was used to conduct the final data analyses, interpret results for an intervention plan, and disseminate findings.

BODY

Methods

The components of this study have been first the formative, qualitative research that informed items for use in the quantitative telephone survey questionnaire, followed by the telephone survey, and analyses of the data to produce an intervention plan and research design for evaluation of the intervention. Based on the formative data collected, hypotheses were refined for testing. Formative research proceeded through a three-step process: open-ended interviews, focus groups, and construction of close-ended questions using rigorous pre-testing. Our formative research was designed to identify possible predictors and correlates of screening practices among Filipino American women as well as to identify commonly used words and expressions that would make questionnaire items readily understood.

Focus Groups. Focus group methodology has been widely used in needs assessments for health promotion and cancer control. This method is useful to generate background information on a given topic; as a first step in developing quantitative measures; to generate research hypotheses; to diagnose problems; to study motivation, insights and connections; to plan and design interventions; evaluate messages and modes of communication; design materials; and interpret results. A detailed plan for the conduct of focus groups was presented in our first annual report. A total of nine focus groups were conducted. Findings from the focus groups were incorporated in refinement of the survey instrument, as well as in the community awareness campaign instituted leading up to and during the telephone survey.

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Open-ended interviews. For in-depth exploration of concepts and interview items, 22 women were interviewed using open-ended questions covering a wide range of issues relevant to use of cancer screening. These questions related respondents' expectations, attitudes, values, norms, and stereotypes regarding cancer and tests for its early detection, including fate and fatalism, personal control over health and longevity, and the pros and cons of cancer screening. The findings from the open-ended interviews were used in the development of the survey instrument.

Conceptual framework. A conceptual framework was developed to unify our hypotheses on factors that affect cancer screening and that should be addressed in interventions to improve screening practices among Filipino American women. The framework depicts the interrelationships among: 1) *Church, Cultural Values, Family Values, Filipino Societal Norms*; 2) *American Societal Norms, Acculturation, Education, and Income*; and 3) *Medical Access, Health Attitudes and Beliefs*.

The hypotheses that resulted from the qualitative research include: a. Low socio-economic status (SES) combined with low acculturation will be associated with low levels of cancer screening; b. Low SES will be associated with reduced access to medical care and low levels of screening; c. More traditional cultural values will be associated with low screening (particularly among those of low SES). Final tests of these hypotheses are nearly completed and will be reported in publications to be submitted in early 1999.

To describe cancer screening practices, and as a means for better understanding the relationships of other factors to screening, we adapted the adoption stage constructs of the Transtheoretical Model (TTM) (Prochaska and DiClemente, 1982) to cancer screening. The TTM provides a framework for describing women who are in different stages of readiness to adopt a health behavior, with the ultimate goal of developing strategies specifically for them to foster advancement in stage. This approach was originally developed to inform smoking cessation strategies (Prochaska and DiClemente, 1983) and subsequently adapted to mammography by Rakowski and colleagues (1993). We adapted Rakowski's model to cancer screening with survey questions designed to identify women who have never heard of a Pap test ("pre-contemplation," Stage 1); women who have heard of the test but not had it ("contemplation," Stage 2); women who have had the test but are not in adherence with guidelines for routine, periodic screening ("action," Stage 3); and women who adhere to routine screening ("maintenance," Stage 4) (Appendix A).

Survey. The survey proceeded through two phases of a pilot test to compare two sampling methods and the main survey.

Pilot Test

Our original research plan called for random sampling of Filipino women using a new approach to random selection of relatively rare populations. Using a modification to Waksberg's (1978) random-digit dialing (RDD) procedure to identify a random sample of Filipino American women, our modification was intended to maximize the efficiency of RDD for selecting persons in minority segments of the population by using data from population-based cancer registries to identify primary sampling units (PSU).

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In order to assure a representative sample, for the few cancer patients whose phone numbers are not available from the registry records (5% of Filipino Americans diagnosed in the Bay Area in 1990 and 1991), Haine's reverse directories was to be used to identify the patient's phone number or the phone number of a neighbor.

After extensive deliberation by our Sampling Sub-Committee, it was determined that a pilot test of this method was needed to ascertain its effectiveness in reaching an adequate number of the target population within the allocated budget. We determined that the pilot would consist of a comparison of the Census Tract Based RDD method (using tracts with at least 5% Filipinos, based on the 1990 census) and the Cancer Registry Based RDD method. It was further agreed that such a pilot test would be an opportunity to test different question formats since the literature to date provides no guidance on survey methods appropriate for this population. To minimize cost, the plan for the pilot included sampling only English-speaking Filipino American women, 133 total from three age strata (ages 20-39, 40-64, and 65 +).

Pilot Test Results

Upon reviewing the findings of the pilot test, we determined that both the Census Tract Based RDD method and the Cancer Registry Based RDD method were essentially equal in terms of the population identified since the women were demographically similar. Furthermore, the difference in the hit rates was not statistically significant. However, we decided that the Census Tract Based random-digit-dialing method was preferable due to its efficiency in requiring fewer phone numbers to reach eligible womehn. This was because this approach resulted in fewer business numbers.

Other findings from the pre-test include a clear preference by respondents for questions that include more context and thus were more specific than is often the case for standard items. We included examples of refined questions in the Second Year Annual Report. Also, it was determined that yes/no responses were preferable to a Likert scale for a telephone survey in this population because respondents consistently did not use the range of the scale where this option was presented, and had difficulty understanding the scale.

Main survey

An age-stratified random sample of Filipino American women, age 20 years and older who self-identified as Filipino, residing in twelve Northern California counties (Alameda, Contra Costa, Marin, Monterey, Sacramento, San Benito, San Francisco, San Joaquin, San Mateo, Santa Clara, Santa Cruz, and Solano) was recruited and interviewed by telephone. According to the 1990 census, 21% of the US Filipino American population and 41% of the California Filipino American population live in these twelve counties. This geographic area covers both urban and rural areas. Over 112,500 Filipino American women age 20 years and older reside in the study target area. The survey was conducted using Computer Assisted Telephone Interviewing (CATI) technology. There was a total of 52,320 calls made with 20,163 numbers called at least once. The total number of Filipino households enumerated was 1188 wherein 65% of homes had only one eligible woman, and 35% of homes had more than one eligible Filipino woman. The response rate was 81%.

Interviews were conducted in English, Tagalog, Ilocano, or Cebuano. Only one woman per household was interviewed. In each eligible household, a woman was randomly selected from the oldest age stratum represented, where the strata were defined as (1) age 65 and over, (2) age 50-64, and (3) age 20-49. Because of the overall population distribution across age groups, older women were over sampled in order to have adequate representation for that subgroup.

A modified Random Digit Dialing (RDD) method was used in census tracts with at least 8% Filipino residents according to the 1990 Census. The sampling frame allowed the inclusion of Filipino women across a broad range of acculturation and took into account the tendency of this population to be more geographically dispersed compared to other ethnic groups. The telephone interviews were conducted by multilingual Filipino American women who were trained in the data collection protocol.

We interviewed 875 Filipino women with the following breakdown for three age strata: 191 respondents 65+, 225 respondents 50-64, and 459 respondents 20-49. The response rate for interviews was 81%. Of the total interviews completed, 54% were completed in English, 41% were completed in Tagalog, 4% were completed in Ilocano, and 1% were completed in Cebuano. The final instrument consisted of 162 items. The mean interview time was 31.2 minutes. At the time of the first contact with the eligible household, all adult Filipino women (20 years of age or older) living within the house were enumerated and classified into one of the three age groups. The respondent was the randomly selected woman from the oldest age group represented by those residing within the household. This design reflects over-sampling of the 65+ age group to identify characteristics and needs we believe will be distinct from other age groups, and that will have major impact on the design of interventions for this group.

Main Survey Analyses

Descriptive analyses were performed to create a profile of the survey respondents. Demographic information by age and Adoption Stage were also generated.

Exploratory factor analyses were conducted on language use and acculturation, traditional health beliefs, religious practice, modesty, and traditional gender roles values to ascertain if these variables are positively or negatively associated with cancer screening behavior. The goal was to identify a small number of dimensions that would show relationships among interrelated variables. The output of the factor analytic model reports the total variance explained by each dimension and their factor loadings based on the rotated component matrix. Principal component analysis was used to extract the factors, generate varimax rotations, and read the factor loadings. Reliability analysis was performed using Cronbach's alpha to determine the internal consistency within each underlying dimension. Except for language use and acculturation, the variables were binary. Thus, a high alpha coefficient was not expected for each dimension. Factor definitions are shown in appendix A.

Chi-square tests were used to assess the associations between screening stage and the demographic variables age (20-39 years, 40-49 years, 50-64 years, 65 and over) and insurance status (none, Medi-Cal or Medicare only, and private). Chi-square tests were also

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used to assess the associations between screening stage and each dimension of cultural factors (English language use, traditional health beliefs, religious practice, modesty, and traditional gender role values) by age groups. For the chi-square analyses, values of each cultural factor were classified as high medium, or low, based on the distribution of the entire sample. Factor values were computed by assuming the values of the component variables, which were standardized to have zero mean and standard deviation one. For English language use, 33% were classified as high, 33% as medium, and 33% as low; for traditional health beliefs, 33% were high, 24% were medium, and 42% were low; for religious practice 63% as high, 22% as medium, and 14% as low; for modesty, 41% were high, 29% were medium, and 30% were low; for traditional gender role values, 35% were high, 31% were medium, and 34% were low.

Main Survey Results

Demographics. The sample (N=875) were quite evenly distributed across the four age strata and showed a wide range of socioeconomic status and acculturation in the Filipino community (Appendix B, Table 1). Survey participants were highly educated (53% with college education) but 11% had less than a high school diploma. Only 9% were without health insurance, and 15% had MediCal or Medicare only. Approximately one quarter of the sample reported an annual household income of less than $20,000 and one quarter had incomes exceeding $75,000. Although 90% were born in the Philippines, one third had spent at least half their life in the US, and 43% spoke a Filipino language more often than English at home. Even though they were a very small group, U.S. born women were included in the sample used for the analysis to ensure representation of this population.

Cancer Screening. The proportion of women reporting recent cancer screening was lower compared to those of San Francisco Bay Area black and white women from the Northern California Cancer Center (Pathways Project, Hiatt et al, unpublished data, 1997): 67% of women 20 and older had a clinical breast exam (CBE) in the past 2 years (Blacks 73%, Whites 77%); 75% of women 20 and older had a Pap test in the past 3 years (Blacks 88%, Whites 86%), and 64% of women over age 50 had a mammogram in the past 2 years (Blacks 72%, Whites 74%).

Among Filipino American women, screening rates varied by age, insurance status, and proportion of life in the U.S. (Tables 2-4). The overall proportion of women age 20 and over reporting current CBE (had CBE in the past 2 years) and regular Pap screening (had Pap smear in the past 3 years and 2 or more in the past 5 years) was 67% and 66%, respectively. However, current CBE and regular Pap screening were less common among women over age 65 (53% each), among the uninsured (49% and 43%), those who had lived less than one-fourth of their life in the U.S. (54% and 49%). The overall proportion of women age 40 and over reporting regular mammography screening (had a mammogram in the past 2 years and 3 or more in the past 5 years) was 39%. However, regular mammography screening was less common in women over 65 (39%) or in their forties (25%), or who had no insurance (18%) or who spent one-fourth of their life in the U.S. (29%).

Overall, this population had an unusually high proportion of women reporting that they never had a Pap smear (12%), with 5% reporting never having heard of the test and 7% reporting

having heard of it but never having had it. This is compared to White and African American women for whom 1.3% and 1.7% respectively reported never having had a Pap in recent surveys also conducted in the San Francisco Bay Area (Hiatt, 1996). Filipino women, age 65 and over had the lowest screening rate (53%), followed by women over 50 years; 13% of older women have never heard of a Pap test and 22% have never had the test. The proportion who have never had a Pap smear is still fairly high for women age 50-64 (11%) and for those age 20-49 (8%). Women without insurance had the lowest cervical screening rate (43%) compared to those with private insurance (73%). There was no significant association between birthplace and Pap stage.

Based on the factor analyses, five dimensions of cultural factors were found to be significantly associated with cancer screening among Filipino American women (Tables 6-8). They are: English Language Use, Religious Practice, Traditional Health Beliefs, Modesty, and Traditional Gender Role Values. These factors consists of selected variables and for the purposes of the study, the English Language Use factor was used as an indicator of acculturation for the women in this study. Regular mammography, current CBE, and regular Pap smear were less common among women who had low extent of English use (32%, 59%, and 52%) and strong Traditional Health Beliefs (29%, 57%, and 55%). High religious practice was associated with regular mammography screening (44%).

For women age 50 years and older, English language use and traditional health beliefs were associated with Pap tests. Seventy-eight percent with high language use had regular Pap tests compared to 46% in the low language use factor. Forty-eight percent of highly traditional older women were maintained compared to 66% and 63% of medium and low traditional subgroups, respectively. Younger Filipino women (less than 50 years) with high concern for modesty are not screened regularly (34%). The highest proportion (13%) of those who have never had a Pap test were in the group with high traditional gender role values. Young women who have been screened but not on maintenance is fairly high across these three groups (15-26%)

CONCLUSIONS

In summary, we found that among Filipino American women in Northern California, screening practices vary by age, insurance status, and cultural factors based on language use and acculturation, traditional health beliefs, religious practice, modesty, and traditional gender role values. Although the majority of Filipino women obtain breast and cervical cancer screening, those who are elderly, less acculturated, or lack insurance are less likely be screened. Interventions should be targeted to Filipino American women who are: age 50 and older, less acculturated, limited in English use, recent immigrants, and who are under-insured or uninsured. These approaches should emphasize lifelong habits of regular screening. Interventions are also needed for both the more educated, affluent women, and for those less acculturated, educated, and affluent. The rates of maintenance screening are lower than would be expected in the former group, given their levels of education and insurance. Interventions should be designed to appeal to the different cultural orientations of these groups.

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The cultural context of cancer screening is critical to the development of acceptable, appropriate, and effective interventions. For example, interventions tailored to older women should use Tagalog or other Pilipino languages and incorporate relevant traditional health beliefs; for young women, interventions should acknowledge the importance of modesty and traditional gender role values. Barriers to screening could be reduced by focusing on access to female health care providers and privacy of the clinical encounter; availability of low-cost or free screening services; reinforcing regular screening; and stressing the importance of screening at all ages. A finding similar to that for White, Black, and Chinese women (Breast and Cervical Cancer Intervention Study--BACCIS, Hiatt et al, unpublished data, 1997) was that the church would not be the venue to find women who are most at risk for not receiving mammography screening because women with strong religious affiliations are most likely to be screened.

The group differences in cancer screening practices among Filipino American women support the assertions by ethnic communities of the heterogeneity within cultural groups, challenging the "one size fits all approach" to community interventions. Although the study was conducted in Northern California, it is reasonable to expect that Filipino American women in other areas of California and to some extent other parts of the country, would be similar to the women in our sample.

Through a mini-grant from the Northern California Cancer Center, the Filipino Women's Health Study also conducted four focus groups on the topic of developing Filipino-focused health education materials between September and October 1997. The focus groups were designed to explore the cultural characteristics and marketing communications strategies that will be useful in designing effective interventions and health education materials on breast cancer screening for Filipino American women. The qualitative findings are intended to supplement the quantitative data collected from the telephone survey conducted by Filipino Women's Health Study. Together, the information will be used to develop culturally appropriate intervention programs and health education materials on breast cancer tailored to the needs of Filipino American women.

The purpose of this study was to collect the information needed to develop an intervention to effectively increase the use of breast cancer screening among Filipino American women. A major step toward this aim is currently underway. The Northern California Cancer Center is the recipient of a five-year program project grant (1998-2002) from the National Cancer Institute, under the overall direction of Dr. Rena Pasick (Filipino study, Co-Principal Investigator). A component study is entitled "Pathfinders: Access and Early Cancer Detection for the Underserved." This is an outreach study to test a highly tailored set of interventions in a randomized, controlled trial targeting a cohort of 1500 low-income women including 200 Filipino American women. The findings from the current DOD study will be used to inform the tailoring of messages in periodic mailings to women and in tailored telephone counseling by trained lay health workers. Results of the NCI trial will greatly expand and refine our knowledge of workable interventions for Filipino women for use in a subsequent larger scale trial aimed at the Filipino community of Northern California.

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LIST OF APPENDICES

APPENDIX A:

STAGE AND FACTOR DEFINITIONS

ADOPTION STAGE DEFINITIONS

Adoption Stage for Mammography*

Stage		Had	Years Since Last	N. Past 5 Years	Plans Next Year	Definition
1. Pre-Contemplation (I)	No	No				Never Heard
2. Pre-Contemplation (ii)	Yes	No			No	Never Had
3. Contemplation (I)	Yes	No			Yes	
4. Relapse	YesYes	Yes	2+		No	Ever Had
5. Contemplation (ii)	Yes	Yes	2+		Yes	
6. Action		Yes	<2	<3		
7. Maintenance	Yes	Yes	<2	3+		Maintenance

Adoption Stage for Clinical Breast Exam*

Stage	Heard	Had	Years Since Last	Definition
1. Pre-Contemplation (I)	No	No		Never Heard
2. Pre-Contemplation (ii) Contemplation (I)	Yes	No		Never Had
3. Relapse Contemplation (ii)	Yes	Yes	2+	Not Current
4. Action Maintenance	Yes	Yes	<2	Current

Adoption Stage for Breast Self-Exam*

Stage	Heard	Had	Years Since Last	No. Past 5 Years	Plans Next Year	Definition
1. Pre-Contemplation (I)	No	No				Never Heard
2. Pre-Contemplation (ii)	Yes	No			No	Never Had
3. Contemplation (I)	Yes	No			Yes	
4. Relapse	Yes	Yes	3+		No	Ever Had
5. Contemplation (ii)	Yes	Yes	3+		Yes	
6. Action	Yes	Yes	<3	<2		
7. Maintenance	Yes	Yes	<3	2+		Maintenance

*Adapted from Rakowski W, Fulton JP, Feldman JP. Stages of adoption and women's decision-making about mammography. *Health Psychol* 12:209-214, 1993.

FACTOR DEFINITIONS AND FACTOR VARIABLES

Factor Definitions

Factor	Values	Component Variables	Coding Scheme	Cronbach's Alpha
English Use	0-3= Low 4-7= Medium 8-16= High	Language: Most comfortable speaking now (D02A) Usually speak at home (D03A) Usually speak with friends (D04A) Usually speak with relatives (D05A)	a b b b	0.86
Religious Practice	0-2=Low 3=Medium 4=High	Church attendance (D29A) Comfort from church (D84A) Praying important part of life (D86A) Give money regularly to church (D89A)	c d d d	0.61
Traditional Health Beliefs	0-2=Low 3-4=Medium 5-8=High	Heat removes fat from the body (D44A) Share antibiotics with others (D47A) Hilot is able to cure illness (D48A) Services of hilot after childbirth (D49A) Buy medicines in the Philippines (D50A) Circumcising tests manhood (D51A) Sick if it is meant to be (D53A) Mangkukulam can make you sick (D55A)	d d d d d d d d	0.60

Coding Scheme of Factor Variables

Coding Scheme	Variables	Value Recodes
a	D02A	0=Filipino 2=English and Filipino Equally 4=English
b	D03A, D04A, D05A	0=Only Filipino 1=More Filipino than English 2=English Filipino Equally 3=More English than Filipino 4=Only English
c	D29A	1=Once a week or more 0=Less often/DK/Refused
d	D84A, D86A, D89A, D44A, D47A, D48A, D49A, D50A, D51A, D53A, D55A	1=Yes 0=No/DK/Refused

APPENDIX B:

RESULTS

TABLE 1. Demographic and Acculturation Characteristics of the Survey Sample (N=875): Filipino American Women

	n	%
Age		
20-39 years	273	31
40-49 years	185	21
50-64 years	224	26
65+ years	193	22
Marital Status		
Married/Living together	649	74
Single	225	26
Highest Level Schooling		
< high School	98	11
High School graduate	310	36
College graduate	462	53
Work Status		
Employed	569	65
Not employed	302	35
Insurance Status		
None	75	9
MediCal/Medicare	130	15
Private	654	76
Income		
< $20K	166	24
$20-$50K	230	33
$50-$75K	136	20
> $75K	160	23
Country of birth		
Philippines	783	90
United States	90	10
Length of stay in the U.S.		
0-5 years	114	15
6-10 years	138	18
11-20 years	282	36
> 20 years	249	32
Proportion of life in the U.S.		
< 1/4	293	34
1/4-1/2	300	34
1/2 or more	277	32
Do you go for check-ups?		
No	200	23
Yes	673	77
English Use Factor		
Low	317	37
Medium	256	30
High	292	34
Religious Practice Factor		
Low	125	14
Medium	195	22
High	555	63
Traditional Health Beliefs Factor		
Low	326	37
Medium	307	35
High	242	28

Note. Percentages may not add up to 100 because of rounding.

TABLE 2. Demographic and Acculturation Characteristics of Filipino American Women by Mammography Stage

	Never Heard n	Never Heard %	Never Had %	Ever Had %	Maintenance %	p Value
Age						0.001
40-49 years	185	1	26	48	25	
50-64 years	224	3	13	33	50	
65+ years	193	9	17	35	39	
Marital Status						0.048
Married/Living together	452	3	17	39	41	
Single	150	7	23	35	34	
Highest Level Schooling						0.001
< high School	87	14	19	36	31	
High School graduate	187	5	19	40	37	
College graduate	324	1	18	38	43	
Work Status						0.001
Employed	349	2	22	40	36	
Not employed	250	8	13	36	43	
Insurance Status						0.001
None	51	18	18	47	18	
MediCal/Medicare	118	8	20	35	36	
Private	419	1	18	37	43	
Income						0.001
< $20K	139	9	16	42	34	
$20-$50K	144	1	23	35	40	
> $50K	180	1	17	42	41	
Country of birth						0.618
Philippines	572	5	18	38	39	
United States	29	0	17	45	38	
Length of stay in the U.S.						0.001
0-5 years	75	13	37	36	13	
6-10 years	90	10	23	40	27	
11-20 years	195	3	17	39	41	
> 20 years	211	1	11	36	52	
Proportion of life in the U.S.						0.001
< 1/4	237	10	25	37	29	
1/4-1/2	218	1	15	39	45	
1/2 or more	145	1	12	39	48	
Do you go for check-ups?						0.001
No	137	11	33	36	20	
Yes	465	3	14	38	45	
English Use Factor						0.001
Low	259	8	21	38	32	
Medium	194	2	17	36	46	
High	142	1	16	42	41	
Religious Practice Factor						0.001
Low	62	10	31	32	27	
Medium	119	8	18	48	26	
High	421	3	17	36	44	
Traditional Health Beliefs Factor						0.001
Low	196	2	12	39	47	
Medium	216	5	19	37	40	
High	190	7	25	38	29	

Note. Percentages may not add up to 100 because of rounding.
p value by chi-square test.

TABLE 3. Demographic and Acculturation Characteristics of Filipino American Women by Clinical Breast Exam Stage

| | Never Heard | | Clinical Breast Exam Stage | | | |
| | | | Never Had | Not Current | Current | |
	n	%	%	%	%	p Value
Age						0.001
20-39 years	273	6	7	16	71	
40-49 years	185	2	9	19	70	
50-64 years	224	5	7	16	72	
65+ years	193	14	8	25	53	
Marital Status						0.277
Married/Living together	649	7	7	19	68	
Single	225	6	11	18	65	
Highest Level Schooling						0.001
< high School	96	20	13	19	47	
High School graduate	316	6	9	18	67	
College graduate	462	3	6	19	72	
Work Status						0.004
Employed	569	5	8	18	70	
Not employed	302	11	8	20	62	
Insurance Status						0.001
None	75	8	21	21	49	
MediCal/Medicare	130	14	9	25	52	
Private	654	5	6	17	72	
Income						0.001
< $20K	166	11	10	21	58	
$20-$50K	230	7	10	17	65	
> $50K	296	2	3	19	75	
Country of birth						0.530
Philippines	783	7	8	19	67	
United States	90	3	7	18	72	
Length of stay in the U.S.						0.001
0-5 years	114	16	14	17	54	
6-10 years	138	12	13	23	51	
11-20 years	282	5	7	16	72	
> 20 years	249	2	3	20	75	
Proportion of life in the U.S.						0.001
< 1/4	283	14	12	20	54	
1/4-1/2	300	4	6	19	71	
1/2 or more	277	2	4	17	76	
Do you go for check-ups?						0.001
No	200	15	13	22	50	
Yes	673	4	6	18	72	
English Use Factor						0.001
Low	317	12	12	18	59	
Medium	256	5	5	21	69	
High	292	3	5	17	75	
Religious Practice Factor						0.072
Low	125	6	6	15	73	
Medium	195	9	10	23	57	
High	555	6	7	18	69	
Traditional Health Beliefs Factor						0.001
Low	326	3	3	18	76	
Medium	307	7	9	18	66	
High	242	10	12	21	57	

Note. Percentages may not add up to 100 because of rounding. p value by chi-square test.

TABLE 4. Demographic and Acculturation Characteristics of Filipino American Women by Pap Exam Stage

| | Pap Exam Stage | | | | | |
| | Never Heard | | Never Had | Ever Had | Maintenance | |
	n	%	%	%	%	p Value
Age						0.001
20-39 years	273	1	7	18	75	
40-49 years	185	2	6	22	70	
50-64 years	224	4	7	26	63	
65+ years	193	13	9	25	53	
Marital Status						0.001
Married/Living together	649	4	5	22	69	
Single	225	8	14	21	57	
Highest Level Schooling						0.001
< high School	98	21	12	22	44	
High School graduate	310	5	8	20	67	
College graduate	462	1	5	24	70	
Work Status						0.001
Employed	569	2	6	19	72	
Not employed	302	9	9	28	54	
Insurance Status						0.001
None	75	9	16	32	43	
MediCal/Medicare	130	15	12	26	47	
Private	654	2	5	20	73	
Income						0.001
< $20K	166	9	12	27	52	
$20-$50K	230	2	7	23	69	
> $50K	296	1	5	17	78	
Country of birth						0.484
Philippines	783	5	7	22	65	
United States	90	2	7	19	72	
Length of stay in the U.S.						0.001
0-5 years	114	10	16	37	38	
6-10 years	138	9	12	16	63	
11-20 years	282	3	7	18	72	
> 20 years	249	2	2	24	72	
Proportion of life in the U.S.						0.001
< 1/4	293	11	13	28	49	
1/4-1/2	300	2	5	19	74	
1/2 or more	277	1	4	18	76	
Do you go for check-ups?						0.001
No	200	9	15	31	44	
Yes	673	3	5	19	72	
English Use Factor						0.001
Low	317	10	11	26	52	
Medium	256	2	4	22	72	
High	292	2	5	18	75	
Religious Practice Factor						0.041
Low	125	7	6	15	71	
Medium	185	7	9	25	59	
High	555	3	7	23	67	
Traditional Health Beliefs Factor						0.001
Low	326	<1	5	16	80	
Medium	307	4	8	28	60	
High	242	12	10	24	55	

Note. Percentages may not add up to 100 because of rounding.

Table 5. Demographic and Acculturation Characteristics by English Use Factor

	English Use Factor			
	Low %	Medium %	High %	p Value
Age	(n = 317)	(n = 256)	(n = 292)	0.001
20-39 years	18	24	51	
40-49 years	19	24	22	
50-64 years	28	33	16	
65 + years	34	18	11	
Marital Status	(n = 317)	(n = 255)	(n = 292)	0.003
Married/Living together	75	80	67	
Single	25	20	32	
Highest Level Schooling	(n = 313)	(n = 256)	(n = 291)	0.001
< High School	23	5	3	
High School graduate	34	30	43	
College graduate	43	65	53	
Work Status	(n = 315)	(n = 256)	(n = 290)	0.001
Employed	56	70	73	
Not employed	44	30	27	
Insurance Status	(n = 308)	(n = 252)	(n = 289)	0.001
None	11	6	8	
MediCal/Medicare	24	14	6	
Private	65	79	85	
Income	(n = 227)	(n = 204)	(n = 252)	0.001
< $20K	38	21	13	
$20-$50K	35	34	31	
> $50K	27	45	55	
Country of birth	(n = 317)	(n = 256)	(n = 290)	0.001
Philippines	98	100	72	
United States	2	<1	28	
Length of stay in the U.S.	(n = 311)	(n = 255)	(n = 208)	0.001
0-5 years	22	11	8	
6-10 years	23	17	11	
11-20 years	33	41	34	
> 20 years	22	31	48	
Proportion of life in the U.S.	(n = 317)	(n = 254)	(n = 289)	0.001
< 1/4	53	33	13	
1/4-1/2	35	47	24	
1/2 or more	12	20	63	
Do you go for check-ups?	(n = 317)	(n = 254)	(n = 292)	0.001
No	32	17	18	
Yes	68	83	82	
Religious Practice Factor	(n = 317)	(n = 256)	(n = 292)	0.001
Low	11	7	24	
Medium	26	21	20	
High	63	72	56	
Traditional Health Beliefs Factor	(n = 317)	(n = 256)	(n = 292)	0.001
Low	22	36	54	
Medium	35	38	33	
High	43	26	13	

Note. Percentages may not add up to 100 because of rounding.
p value by chi-square test.

Table 6. Demographic and Acculturation Characteristics by Religious Practice Factor

| | Religious Practice Factor | | | |
	Low %	Medium %	High %	p Value
Age	(n=125)	(n=195)	(n=555)	0.001
20-39 years	50	39	24	
40-49 years	22	18	22	
50-64 years	14	21	30	
65+ years	13	22	24	
Marital Status	(n=125)	(n=195)	(n=554)	0.260
Married/Living together	69	77	75	
Single	31	23	25	
Highest Level Schooling	(n=124)	(n=193)	(n=553)	0.001
< High School	8	14	11	
High School graduate	52	38	31	
College graduate	40	48	58	
Work Status	(n=123)	(n=195)	(n=553)	0.293
Employed	72	65	64	
Not employed	28	35	36	
Insurance Status	(n=118)	(n=191)	(n=550)	0.273
None	13	10	7	
MediCal/Medicare	11	15	16	
Private	76	75	77	
Income	(n=99)	(n=153)	(n=440)	0.322
< $20K	16	25	25	
$20-$50K	35	35	32	
> $50K	48	39	43	
Country of birth	(n=125)	(n=194)	(n=554)	0.001
Philippines	76	86	94	
United States	24	14	6	
Length of stay in the U.S.	(n=94)	(n=168)	(n=521)	0.303
0-5 years	14	20	13	
6-10 years	18	20	17	
11-20 years	36	34	37	
> 20 years	32	26	34	
Proportion of life in the U.S.	(n=123)	(n=194)	(n=553)	0.001
< 1/4	27	39	33	
1/4-1/2	24	29	39	
1/2 or more	50	32	28	
Do you go for check-ups?	(n=125)	(n=193)	(n=555)	0.001
No	30	30	19	
Yes	70	70	81	
Traditional Health Beliefs Factor	(n=125)	(n=195)	(n=555)	0.248
Low	45	34	37	
Medium	34	38	34	
High	22	28	29	

Note. Percentages may not add up to 100 because of rounding.
p value by chi-square test.

Table 7. Demographic and Acculturation Characteristics by Traditional Health Beliefs Factor

| | Traditional Health Beliefs Factor | | | |
	Low %	Medium %	High %	p Value
Age	(n = 326)	(n = 307)	(n = 242)	0.001
20-39 years	40	30	21	
40-49 years	22	20	21	
50-64 years	23	27	27	
65 + years	15	23	31	
Marital Status	(n = 326)	(n = 307)	(n = 241)	0.662
Married/Living together	75	76	72	
Single	25	24	28	
Highest Level Schooling	(n = 325)	(n = 304)	(n = 241)	0.001
< High School	4	11	22	
High School graduate	34	37	37	
College graduate	62	52	41	
Work Status	(n = 324)	(n = 306)	(n = 241)	0.007
Employed	72	63	59	
Not employed	28	37	41	
Insurance Status	(n = 326)	(n = 299)	(n = 234)	0.001
None	7	7	14	
MediCal/Medicare	9	15	25	
Private	85	78	61	
Income	(n = 269)	(n = 241)	(n = 182)	0.001
< $20K	15	24	37	
$20-$50K	30	35	36	
> $50K	55	41	27	
Country of birth	(n = 326)	(n = 305)	(n = 242)	0.001
Philippines	82	92	97	
United States	18	8	3	
Length of stay in the U.S.	(n = 267)	(n = 282)	(n = 234)	0.001
0-5 years	8	18	18	
6-10 years	14	18	22	
11-20 years	35	36	37	
> 20 years	43	28	23	
Proportion of life in the U.S.	(n = 324)	(n = 306)	(n = 240)	0.001
< 1/4	20	36	49	
1/4-1/2	34	37	32	
1/2 or more	46	27	19	
Do you go for check-ups?	(n = 326)	(n = 306)	(n = 241)	0.077
No	19	23	27	
Yes	81	77	73	

Note. Percentages may not add up to 100 because of rounding.
p value by chi-square test.

Table 8. Selected Variables for Five Cultural Factors

I. English Language Use Factor

Variable	Loadings	Cronbach's Alpha	Percent Variance
Language used when speaking with relatives	0.799	0.87	31
Language most comfortable speaking now	0.763		
Language usually spoken at home	0.751		
Language used when speaking with friends	0.707		
Whether born in the Philippines, US, or elsewhere	0.690		
For foreign borg, age of arrrival in the US	0.679		

Traditional Health Beliefs

Variable	Loadings	Cronbach's Alpha	Percent Variance
A *hilot* (traditional healer) or *herbolario* is able to cure illness	0.753	0.51	23
The services of a *hilot* (midwife) after childbirth is essential	0.646		
A *mangkukulam* (witch or sorcerer) can make you sick	0.591		
Heat and sweating remove fat from the body	0.511		

III. Religious Practice

Variable	Loadings	Cronbach's Alpha	Percent Variance
Frequency of going to church	0.769	0.54	28
Giving money regularly to the church	0.74		
Getting a lot of comfort from going to church	0.671		
Importance of prayer	0.611		

IV. Modesty

Variable	Loadings	Cronbach's Alpha	Percent Variance
Importance that the doctor is a woman	0.785	0.56	27
Embarrassed when male doctor examines the breast	0.738		
Filipino men prefer female relatives see a female doctor	0.647		

V. Traditional Gender Role Values

Variable	Loadings	Cronbach's Alpha	Percent Variance
Father always head of household even if wife works	0.726	0.50	25
Husband should give paycheck to wife	0.700		
Women should remain virgins until marriage	0.680		

APPENDIX C:
MANUSCRIPTS IN PRESS AND IN PROGRESS
(Primary Authors)

Manuscript in Press (copy attached):

McBride, M., Pasick, R., Stewart, S., Tuason, N., Sabogal, F., and Duenas, G.
Factors Associated with Cervical Cancer Screening for Filipino American Women in
California. Asian and Paicific Islander Journal of Health, Fall 1998 or Winter 1999.

Manuscripts in Progress:

1.   McBride MR, Pasick RJ: Cancer Screening in Filipino Women.

2.   McBride MR, Yeo G: Cohort Differences in Cancer Screening Among Older
        Filipino Women.

3.   Tuason N, McBride M: Comparison of Cultural Information From Contextual
        and Non-Contextual Questions.

4.   Pasick RJ, Stewart S, Hiatt RA: A Comparison of Access to Health Care and
        Cultural Beliefs as Determinants of Cancer Screening Among Filipino American
        Women and a Cross-Cultural Analysis of Cancer Screening Practices Across
        Six Ethnic Groups: Comparative Data from Northern California and the United
        States.

5.   Pasick RJ: Development of a Filipino-language Survey From Concept to Data:
        Concordance Between Qualitative and Quantitative Findings in Cancer
        Screening Variables.

6.   Tuason N: Conceptual Paper on Cultural Values and Attitudes.

7.   Sabogal F: Sex role, Familism, religiosity attitudes and repeated
        mammography.

8.   Sabogal F: Development of an acculturation scale for Filipinos.

9.   Stewart S: Effect of Within Household Sampling in the Filipino Women's
        Health Study Telephone Survey.

10.   Stewart S: Examining patterns of acculturation of younger Filipino women
        (under 40 years old) and its influence on health behavior.

11.   Horn-Ross P: Comparison of two random-digit-dialing (RDD) Sampling
        Methods: Census Based versus Cancer Registry Based.

FACTORS ASSOCIATED WITH CERVICAL CANCER SCREENING AMONG FILIPINO WOMEN IN CALIFORNIA

Melen R. McBride, RN, PhD, Rena J. Pasick, DrPH, Susan Stewart, PhD,
Noe Tuason, MA, Fabio Sabogal, PhD, Grace Duenas, MPH

ABSTRACT

Purpose. This paper presents findings on cervical cancer screening use and associated cultural factors in Filipino American women. These data were generated as part of a federally funded research project on early cancer detection in this population in Northern California which began in 1994.

Methods. The study had three components: formative research designed to inform development of a survey instrument to assess cultural attitudes and beliefs, and screening practices among Filipino American women; fielding the survey; and analyses aimed at development of culturally appropriate intervention strategies. The formative research took one year using qualitative methods consisting of 22 individual interviews and 10 focus groups. The goal was identification of variables and factors that may be associated with screening practices for use in developing culturally appropriate survey questions. A total of 162 items was translated from English into Tagalog, Ilocano, and Cebuano for use in the final instrument.

An age-stratified random sample of 875 Filipino American women, age 20 and older was interviewed by telephone in 12 counties of Northern California using census tracts with at least 8% Filipino residents. The strata were defined as (1) age 65+, (2) age 50-64, (3) age 20-49. Data analysis included descriptive analysis, factor analysis, and chi-square tests.

Summary of Important Findings. The proportion of women in this sample who have never had a Pap smear is very high (12%). Results indicate that screening rates for cervical cancer vary by age, insurance, and factors related to English language use; traditional health beliefs; modesty; and traditional gender role values. Regular Pap screening decreased as age increased (p=.001). Filipino American women without health insurance had the lowest rate of routine screening (43%) compared to those with private insurance (73%) (p=.001). The associations with English language use and traditional health beliefs were in the same direction for both young women (<50 years) and older women (>50 years); however, they were more dramatic for older women. The proportion never having had a Pap test is high among younger women in the high modesty group (13%) (p=.01) and those with high traditional gender role values (13%) (p=.01); and among older women in the high traditional health beliefs (26%) (p=.001) and the low English language use group (25%) (p=.001).

Major Conclusions. Barriers to cervical cancer screening may be reduced by targetting Filipino women who are less acculturated, recent arrivals, and under-insured or uninsured. Interventions are likely to be most appropriate and effective if tailored to include the following: for older women, use Tagalog and sensitivity to traditional health beliefs; for younger women, acknowledgement of modesty concerns and traditional gender role

values; emphasis on access to female providers, privacy during the exam, availability of low cost or free services, and the importance of screening at all ages and at regular intervals.

Relevance to Asian and Pacific Islander American populations. This is the first study of Filipino American women to identify possible barriers to early detection of cervical cancer which can be used to develop culturally appropriate interventions.

FACTORS ASSOCIATED WITH CERVICAL CANCER SCREENING AMONG FILIPINO AMERICAN WOMEN IN CALIFORNIA

Melen R. McBride, RN, PhD, Rena Pasick, DrPh, Susan Stewart, PhD, Noe Tuason, MA, Fabio Sabogal, PhD, Grace Duenas, MPH

INTRODUCTION

The Filipino population is currently the largest Asian American subgroup in California and the second largest immigrant group in the U.S. after the Mexican Americans.[1,2] However, only a small number of health related studies have been published for this population. The California Cancer Registry reports that incidence rates for invasive cervical cancer is higher in Filipino American women than for whites, Chinese and Japanese women in the San Francisco Bay Area.[3] Often, the five-year survival rate for cervical cancer is lower for Filipino American women than for white women[4]. Emphasis on early and regular cervical screening as a public health intervention must address significant barriers within the cultural context of the Filipino women.

The Filipino American community has it origins in the 1760's, when a few Filipino men settled in Louisiana to escape slave labor in the Spanish galleons.[5] Immigration in larger numbers occurred in the 1900's as Filipinos (mostly males) entered the labor market in Hawaii, California, and other areas of the West and East Coast. The arrival of large numbers of Filipino women began in the 1940's, increasing in the 1960's with mostly professional women, and in the 1980's when many older women immigrated as "followers of adult children." [6,7,8] The population growth is expected to continue, yet there are little data on the health of Filipino Americans. Lack of information on cancer screening practices, including barriers and motivators, is a serious impediment to the development of interventions which may be effective in eliminating cervical cancer disparities for Filipino American women.

A population-based survey can provide data on behavior and the underlying cultural, attitudinal, and socioeconomic factors that influence cancer screening in Filipino American women. This information would serve as a foundation for culturally appropriate interventions aimed at increasing screening utilization and subsequent prevention of cervical cancer.

The purpose of this paper is to present findings on cervical cancer screening use and associated cultural factors in this population. These data were generated as part of a federally funded research project on early cancer detection among Filipino American women in Northern California which began Fall 1994.[9,10]

METHODS

The study consisted of three components. The first was formative research designed to inform the development of a survey instrument to assess cultural values, attitudes, beliefs and screening practices in Filipino American women. Second was fielding of the survey, and third was analysis aimed at development of culturally appropriate intervention strategies.

Formative Research

The formative research took one year and included extensive use of qualitative methods. The purpose was identification of variables and factors that may be associated with screening practices among Filipino American women, and indigenous concepts, symbolic expressions and messages in the Pilipino languages for use in culturally appropriate questions.

a. Focus groups and interviews: Twenty-two individual interviews using open-ended questions and six focus groups of young (20-39 years), middle-aged (40-64 years), and older women (65+ years) were conducted. Separate sessions in English and in Tagalog were scheduled for each age group and an English session was held for Filipino males and for Filipino physicians. Another focus group of older women conducted in Tagalog met twice to collect in-depth data on health beliefs and practices. Information was summarized to develop a conceptual framework which guided further development of items for the instrument. The framework consisted of factors associated with access to health care such as socioeconomic status and acculturation, relationships of cultural beliefs and values to health practices, family support, religiosity, and ultimately to cancer screening.

b. Survey questions and translations: Survey questions were developed in the following domains: demographics and acculturation; health status, beliefs, and practices;

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Filipino cultural values; social support; traditional health practices; use of medical care; access to care; and cancer screening beliefs and practices. A total of 162 items was used in the final instrument. These were translated from English into Tagalog, Ilocano, and Cebuano. The items were pre-tested following translation and back-translation. To describe Pap smear screening practices, and as a means for better understanding the relationships of other factors to screening, we adapted the adoption stage constructs of the Transtheoretical Model (TTM)[11] to Pap smear screening. The TTM provides a framework for describing women who are in different stages of readiness to adopt a health behavior, with the ultimate goal of developing strategies specifically for them to foster advancement in stage. This approach was originally developed to inform smoking cessation strategies[12] and subsequently adapted to mammography by Rakowski and colleagues.[13] We adapted Rakowski's model to Pap smear screening (Table 1) with survey questions designed to identify women who have never heard of a Pap test ("pre-contemplation," Stage 1); women who have heard of the test but not had it ("contemplation," Stage 2); women who have had the test but are not in adherence with guidelines for routine, periodic screening ("action," stage 3); and women who adhere to routine screening ("maintenance," stage 4).

Insert Table 1

Survey Sample

An age-stratified random sample of 875 women, age 20 and older who self-identified as Filipino, residing in twelve Northern California counties (Alameda, Contra Costa, Marin, Monterey, Sacramento, San Benito, San Francisco, San Joaquin, San Mateo, Santa Clara, Santa Cruz, and Solano) was recruited and interviewed by telephone . These regions cover urban and rural areas. The 1990 Census shows that 21% of the U.S. Filipino American population and 41% of the California Filipino American population live in the target counties. Interviews were conducted in English, Tagalog, Ilocano, or Cebuano. Only one woman per household was interviewed. In each eligible household, a woman was randomly selected from the oldest age stratum represented, where the strata were defined as (1) age 65 and over, (2) age 50-64, and (3) age 20-49. Because of the overall population distribution

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across age groups, older women were over sampled in order to have adequate representation for that subgroup.

A modified Random Digit Dialing (RDD) method[14] was used in census tracts with at least 8% Filipino residents according to the 1990 Census. The sampling frame takes into account the tendency of this population to be more geographically dispersed compared to other ethnic groups. The telephone interviews were conducted by multilingual Filipino American women who were trained in the data collection protocol.

Analysis

Descriptive analyses were performed to create a profile of the survey respondents. Demographic information by age and Pap Stage were also generated.

Exploratory factor analyses were conducted on language use and acculturation, traditional health beliefs, and gender roles and sexual values to ascertain if these variables are positively or negatively associated with cancer screening behavior. The goal was to identify a small number of dimensions that would show relationships among interrelated variables. The output of the factor analytic model reports the total variance explained by each dimension and their factor loadings based on the rotated component matrix. Principal component analysis was used to extract the factors, generate varimax rotations, and read the factor loadings. Reliability analysis was performed using Cronbach's alpha to determine the internal consistency within each underlying dimension. Except for language use and acculturation, the variables were binary. Thus, a high alpha coefficient was not expected for each dimension.

Chi-square tests were used to assess the associations between Pap stage and the demographic variables age (20-39 years, 40-49 years, 50-64 years, 65 and over) and insurance status (none, Medi-Cal or Medicare only, and private). Chi-square tests were also used to assess the associations between Pap stage and each dimension of cultural factors (English language use, traditional health beliefs, modesty, and traditional gender role values) by age group (20-49 years, and 50 and over). For the chi-square analysis, values of each cultural factor were classified as high medium, or low, based on the distribution of the entire sample. Factor values were computed by summing the values of

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the component variables, which were standardized to have zero mean and standard deviation one. For English language use, 33% were classified as high, 33% as medium, and 33% as low; for traditional health beliefs, 33% were high, 24% were medium, and 42% were low; for modesty, 41% were high, 29% were medium, and 30% were low; for traditional gender role values, 35% were high, 31% were medium, and 34% were low.

RESULTS

Demographics

The sample was quite evenly distributed across the four age strata (Table 2). Survey participants were highly educated (53% with college education); had household income of $50,000 or better (43%); and had either public or private health insurance (91%). Although the sample was a predominantly immigrant group (90%), among foreign born respondents, more than two-thirds (68%) have lived in the U.S. for over 10 years. Even though they were a very small group, U.S. born women were included in the sample used for the analysis to ensure representation of this population.

Insert Table 2

Pap Smear Use

Overall, this population had an unusually high proportion of women reporting that they never had a Pap smear (12%), with 5% reporting never having heard of the test and 7% reporting having heard of it but never having had it. This is compared to White and African American women for whom 1.3% and 1.7% respectively reported never having had a Pap in recent surveys also conducted in the San Francisco Bay Area.[15] Among all respondents, screening rates for cervical cancer varied by age and insurance status (Table 3). Regular Pap screening decreased as age increased (p=.001). Filipino women, age 65 and over had the lowest screening rate (53%), followed by women over 50 years. Furthermore, 13% of older women have never heard of a Pap test and 22% have never had the test. In addition, the proportion who have never had a Pap smear is still fairly high for women age 50-64 (11%) and for those age 20-49 (8%). Women without insurance had the lowest cervical screening rate (43%) compared to those with private insurance (73%)

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(p=.001). There was no significant association between birthplace and Pap stage.

Insert Table 3

Factors Related to Pap Test Screening Stage

Based on the factor analyses, four dimensions of cultural factors were found to be significantly related to cervical cancer screening among Filipino American women. They include variables pertaining to English language use, traditional health beliefs, modesty, and gender roles. In this paper, the terms used to describe these cultural factors are English language use factor (ELUF), traditional health beliefs factor (THBF), modesty factor (MF), and traditional gender role values factor (TGRVF).

The ELUF consists of six variables: language used when speaking with relatives; language most comfortable speaking now; language usually spoken at home; language used when speaking with friends; whether born in the Philippines, U.S., or elsewhere; and age of arrival to the U.S. among the foreign born. Factor loadings for these items were 0.799, 0.763, 0.751, 0.707. 0.690, and 0.679 respectively. This factor explained 31% of the variance with a reliability coefficient of 0.87. Although the last two variables are not directly related to language use, they are highly associated with language. Those who were born in the U.S. or who came to the U.S. at a very young age tended to use English at home or when speaking with relatives and friends. Therefore, for the purposes of the study, the ELUF was used as an indicator of acculturation for the Filipino American women in this sample. Thus, the women in the high ELUF are considered to be a highly acculturated group.

The THBF includes four variables on beliefs in the : traditional healer's (such as a hilot or herbolario) ability to cure illness; services of a midwife (also called hilot) as essential after childbirth; witch or sorcerer's (mangkukulam) ability to make a person sick; and effects of heat and sweating to remove fat from the body. Factor loadings were 0.753, 0.646, 0.591, and 0.511, respectively (Cronbach's alpha=.51). These cultural beliefs explained 23% of the variance

The MF consists of three variables: importance of having a female physician

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perform the pelvic exam; feeling embarrassed when a male physician does the breast exam; and perceiving that Filipino men prefer that women in their family see a female doctor. Factor loadings for these items were 0.785, 0.738, and 0.647, respectively (Cronbach's alpha=.56); explaining 27% of the variance.

The TGRVF consists of three culture-based belief variables: the father is always the head of the household even when the wife works; the husband should give his paycheck to his wife; and women should remain virgins until they get married. Factor loadings were 0.726, 0.700, and 0.680, respectively (Cronbach's alpha=.50). This factor explains 25% of the variance.

English Language Use Factor (ELUF): A positive association between the English Language Use Factor and Pap stage was found (p=.001) for women over 50 years of age (Table 4). Seventy-eight percent of the women in the high language use factor subgroup went for Pap tests regularly compared to 46% of the women in the low language use factor. It is interesting to note that almost half (n=207) of the older women were in the low English language use category.

Traditional Health Belief Factor (THBF): The Traditional Health Belief Factor was inversely associated with cervical screening rates among older women (p=.001) (Table 4). Forty-eight percent of highly traditional women were at the maintenance stage for screening compared to 66% and 63% of medium and low traditional subgroups, respectively (Table 4).

Insert Table 4

Modesty Factor (MF): Among younger Filipino women (less than 50 years) the Modesty Factor had a significant effect on cervical screening behavior (Table 5). The proportion in maintenance among the young women with high concern for modesty was significantly lower (66%) than for women in the medium (76%) and low (80%) modesty factor (p=.01). Thirty-four percent of young women in the high Modesty Factor group are not screened regularly.

Traditional Gender Role Values Factor (TGRVF): In younger women, Pap

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stage is inversely associated with the Traditional Gender Role Values Factor (p=.01) (Table 5). Eighty percent of women in the low TGRVF group are regularly screened. The high TGVRF group has the highest proportion who have never had a Pap smear test (13%). Also, the proportion of young women who have been screened but are not in maintenance is fairly high across the three groups (15-26%).

Insert Table 5

SUMMARY AND CONCLUSIONS

In summary, we found that among Filipino American women in Northern California, Pap stage varies by age, insurance status, and cultural factors based on language use and acculturation, traditional health beliefs, modesty, and traditional gender role values. Older women and women without health insurance had lower screening rates. The associations with English language use and traditional health beliefs were in the same direction for both younger and older women; however, they were stronger for the older age group. For modesty and traditional gender role values, no significant association was found with Pap stage among older women in contrast to the younger women.

Low screening rates were found among older women in the low English language use and those in the high Traditional Health Beliefs Factor. These women immigrated late in life; prefer to use a Pilipino language to speak to family and friends; and have cultural beliefs related to bodily functions, powers of indigenous healers, and an evil spirit such as a sorcerer or witch.

In the younger group, Pap stage is associated with modesty and traditional gender role values. A high proportion of women are not screened on a regular basis. They consider it important to have a female doctor do the pelvic exam; feel embarrassed when a clinical breast exam is done by a male doctor; and perceive that male family members prefer a female doctor for their female relatives. They may also believe that the father heads the household; a husband should give his wages to his wife; and one should remain a virgin until married.

As a predominantly immigrant population, Filipino American women may continue

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to be influenced by the value of modesty imparted by their mothers and grandmothers. [15,16]
In the focus groups, most older women and many middle aged women reported having
no experience with a gynecological exam before the first pregnancy or before marriage.
Some older women commented also on the possible restorative effect on virginity by
prolonged sexual inactivity. These beliefs suggest concern for modesty and values
associated with virginity. It is likely that the young women in this study have been raised
in immigrant households and these beliefs and values are being passed on to them.

These subgroup differences in use of cervical screening services support the
assertions by ethnic communities of the heterogeneity within cultural groups, challenging
the "one size fits all approach" to community interventions. Although the study was
conducted in Northern California, it is reasonable to expect that Filipino American women
in other areas of California and to some extent other parts of the country, would be similar
to the women in our sample.

RECOMMENDATIONS

Although the majority of respondents have had at least one Pap smear test in their
lifetime, the study shows that interventions should be targeted specifically to Filipino
American women who are less acculturated, recent arrivals, and who are under-insured or
uninsured. Interventions are needed for both the more educated, affluent women, and for
those less acculturated, educated, and affluent. The rates of maintenance screening are
lower than would be expected in the former group, given their levels of education and
insurance. The rates for the latter group are extraordinarily low, and require intensive
intervention. Such interventions should be designed to appeal to the different cultural
orientations of these groups.

The cultural context of screening, as elucidated in this study, is critical to the
development of acceptable, appropriate, and effective interventions. Interventions tailored
to older women should use Tagalog or other Pilipino languages and incorporate relevant
traditional health beliefs.

Strategies tailored for younger women should acknowledge the importance of
modesty and traditional gender role values. Barriers to cervical screening could be reduced

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by focusing on access to female health care providers and privacy of the clinical encounter; featuring the availability of low-cost or free screening services; reinforcing regular screening; and stressing the importance of screening at all ages.

As in other ethnic communities, many traditional Filipino families in the U.S. and in the Philippines make every effort to protect the privacy of their kin particularly the young unmarried woman, to assure that her future includes a "good" marriage partner.[16,17,18] They may avoid going to the community clinic during cancer screening drives for Pap smear test fearing embarrassment or being seen by neighborhood friends and acquaintances. How to discretely recruit Filipino American women for a first time Pap test is a challenge for health care providers.

While only a small number of Filipino women are truly monolingual, comprehension of verbal and written English even among many bilingual Filipino women can be challenging. For educational materials, it is preferable to use language-specific educational materials or combine a Pilipino language (e.g., Tagalog) with an easily understood English version. An evolving form of communication in the Filipino American community is "Tag-Lish", a combination of Tagalog and English expressions skillfully blended in written or oral form.[19] Using this mode of communication for educational materials may help to highlight cultural contexts and enhance cultural bonds for many Filipino women enabling them to ultimately change behavior.

Information presented in this paper provides some basis for culturally appropriate interventions to increase screening and rescreening rates for cervical cancer among Filipino women in the U.S. Research on health issues of Filipino American women such as improving cancer screening rates using carefully tailored comprehensive interventions for targeted subgroups should be incorporated in the priority agenda for Asian American Pacific Islander research. It has been proposed that building blocks to effective interventions include a link between the behavior to be changed and the strategies designed to influence this change.[11,12] In this study, adaptation of the Transtheoretical Model (TTM) for change gives structure to understanding and explaining the change process. To continue the initial efforts on cervical cancer prevention for this population, policy makers need to expand their vision on health promotion by increasing resources to build and strengthen the

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infrastructure in the Filipino American community to conduct community-based programs for early detection of cervical cancer and other types of cancer in Filipino American women.

ACKNOWLEDGMENT

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Table 1. PAP STAGE DEFINITIONS

STAGES	HEARD	HAD PAP	YRS SINCE LAST PAP	NO. OF PAPS PAST 5 YRS
Never Heard	No	No		
Heard, Never Had	Yes	No		
Had, Not At Maintenance	Yes Yes	Yes Yes	3+ <3	0 1
Maintenance	Yes	Yes	<3	2+

Adapted from Rakowski, et al., Health Psychology, 12:209-214, 1993.

TABLE 2. SAMPLE DEMOGRAPHICS (N=875)

Variable	Subgroup	Percent
Age	20-39 years	31
	40-49 years	21
	50-64 years	26
	65+ years	22
Marital Status	Married/Living together	74
	Single	26
Income	Below $20,000	24
	From $20-50,00	33
	Above $50,00	43
Years in the U.S. (For foreign born only)	0-10 years	32
	11-20 years	36
	20 + years	32
Education	Some high school	11
	High school graduate	36
	College graduate	53
Insurance	None	9
	Medi-Cal/Medicare	15
	Private	76
Birthplace	Philippines	90
	U.S.	10
Language of interview	English	54
	Tagalog	41
	Ilocano	4
	Cebuano	1

TABLE 3. PAP STAGE BY AGE AND INSURANCE (N=875)

Variable	n	Never Heard %	Heard, Never Had %	Had, Not At Main- tenance %	Main- tenance %
AGE (p=0.001)					
20-39 yrs	273	1	7	16	75
40-49 yrs	185	2	6	22	70
50-64 yrs	224	4	7	26	63
65+ yrs	193	13	9	25	53
Insurance (p=0.001)					
None	76	9	16	32	43
MediCal/Medicare	130	15	12	26	47
Private	654	2	5	20	73

Note: p value by chi-square test
Percentages may not add up to 100 due to rounding.

TABLE 4. PAP STAGE BY FACTORS FOR FILIPINO AMERICAN WOMEN OVER 50 YEARS (N=17)

Cultural Factors	n	Never Heard %	Heard, Never Had %	Had, Not At Main-tenance %	Main-tenance %
English language use (p=0.001)					
Low	207	15	10	29	46
Medium	143	2	7	24	66
High	67	0	3	19	78
Traditional health beliefs (p=0.001)	166	3	7	27	63
Low	102	5	7	23	66
Medium	149	16	10	26	48
High					
Modesty (p=0.10)					
Low	130	5	4	31	61
Medium	128	11	12	23	55
High	159	9	8	24	59
Traditional gender role values (p=0.12)					
Low	100	4	6	27	63
Medium	130	8	5	24	63
High	187	10	11	26	52

Note: p value by chi-square test
Percentages may not add up to 100 due to rounding.

TABLE 5. PAP STAGE BY FACTORS FOR FILIPINO AMERICAN WOMEN UNDER AGE 50 (n=458)

Cultural Factor	n	Never Heard %	Heard, Never Had %	Had, Not At Main- tenance %	Main- tenance %
English language use (P=0.02)					
Low	86	1	16	23	60
Medium	147	1	5	20	74
High	225	2	5	16	77
Traditional health beliefs (P=0.04)					
Low	205	0	7	13	80
Medium	110	3	5	27	65
High	143	2	8	20	70
Modesty (P=0.01)					
Low	134	1	2	17	80
Medium	127	0	6	17	76
High	197	3	10	21	66
Traditional gender role values (P=0.01)					
Low	198	2	4	15	80
Medium	142	2	6	26	65
High	118	1	12	17	70

Note: p value by chi-square test
   Percentages may not add up to 100 due to rounding.

APPENDIX D

Presentations

PRESENTATIONS

McBride MR, Pasick RJ, Stewart SL, Tuason N, Sabogal F, Dueñas G. *Factors Associated with Cervical Cancer Screening Among Filipino American Women.* Presented at Cancer Concerns for Asian Americans/Pacific Islanders Conference, San Francisco, CA, June 1998.

Pasick RJ, Stewart SL. *Breast and Cervical Cancer Screening in Filipino American Women.* Poster presented at American Society of Preventive Oncology, Bethesda, MD, March 1998.

McBride M, Pasick RJ. *Early Cancer Detection for Filipino American Women.* Poster presented at the Department of Defense Breast Cancer Research Program Meeting, Washington, DC, November 1997.

Factors Associated with Cervical Cancer Screening Among Filipino Women

McBride MR, Pasick RJ, Stewart SL, Tuason N, Sabogal F, Dueñas G

This study is part of a research project on breast and cervical cancer among Filipino women funded by the Department of Defense, US Medical Research and Material Command. The grant (#17-94-J-4215) was awarded to the Northern California Cancer Center, a non-profit organization in the Bay Area. The overall goal of the project is to develop a comprehensive program of interventions that will increase early breast and cervical cancer detection in this population who has been shown to have high rates of late stage breast and cervical cancer. The focus of the study is to: 1) collect information on the knowledge, attitudes, practices, barriers, and possible incentives to cervical cancer screening; 2) identify cultural barriers to early detection, and 3) use culturally relevant information to develop an intervention plan.

Breast & Cervical Cancer Screening in Filipino American Women

Pasick RJ and Stewart SL

Filipino American women have significantly higher rates of late stage breast and cervical cancer compared with White women, yet there have been no population-based surveys of breast and cervical screening in this large population. This study is a modified random-digit-dialing telephone survey of 875 Filipinas from Northern California census tracts with at least 8% Filipinos, administered in English, Tagalog, Ilocano, and Cebuano. In this largely foreign-born population (90%), mammography and Pap smear utilization were significantly associated with age, marital status, education, employment, insurance, income, length of US residency, English use, religious practices, and health beliefs. Multiple logistic regression was used to model receipt of screening given these factors. Among women 20+, 12% had never had a Pap smear. Significant predictors in this group were being unmarried, less than a college diploma, 10 years or less in US, low English use, and more traditional health beliefs. Among women 50-75, despite being well educated (50% college grads), insured (90%), and not low income (65%>$20,000), 19% had never had a mammogram and 62% were not in the maintenance stage for mammography (3 in the past 5 years, with 1 less than 2 years ago). Predictors of maintenance were insurance, more than 10 years in the US, and high religious affiliation. Interventions for Filipinas should be tailored to the characteristics of recent immigrants.

Early Cancer Detection for Filipino American Women

McBride MR, Pasick RJ, Sabogal F, Stewart S,
Tuason N, Horn-Ross P, Sustento-Seneriches J, Dueñas G

The goal of this research is to develop a comprehensive program of interventions that will increase early breast and cervical cancer detection among Filipino American women. This population has been shown to have high rates of late stage breast and cervical cancer. The focus of the study is a random, population-based telephone survey of 875 Filipino American women, ages 20 and over. The specific aims of the study are: a) collect information on the correlates, barriers, and possible incentives to periodic use of breast cancer screening, including access to care, knowledge, attitudes, intentions, and practices regarding preventive health care in general, and cancer and cancer screening, in particular; b) identify and define possible cultural barriers to early cancer detection across a range of socio-economic status, acculturation levels and periods of immigration; c) assess the applicability of behavioral theories to cancer screening among Filipino Americans; d) Use information from specific aims a, b, and c to develop a detailed plan, in the form of a research proposal, for implementation and evaluation of culturally appropriate interventions targeted to Filipino women and aimed at eliminating barriers to cancer screening and increasing early detection rates.